DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SUPPLEMENTAL ~~STANDARD~~ SPECIFICATION

Section 801—Fine Aggregate

801.1 General Description

This section includes the requirements for fine aggregate. All aggregate shall be the specified type, class, and grade.

801.1.01 Related References

A. Standard Specifications

Section 800—Coarse Aggregate

Section 441—Miscellaneous Concrete

B. Referenced Documents

GDT 4

GDT 5

GDT 63

GDT 75

GDT 132

QPL 1

SOP 1

AASHTO T 11

AASHTO T 21

AASHTO T 27

AASHTO T 112

AASHTO T 303

ASTM C 295

801.2 Materials

801.2.01 Fine Aggregate for Cushion

A. Requirements

Use the type, class, and grade of fine aggregate specified.

1. Types

Use fine aggregate for cushion under granite curb or brick that is natural or manufactured sand with hard, strong, durable particles. Make manufactured sand from crushed gravel or stone meeting the requirements of Section 800. For a list of fine aggregate sources, see QPL 1.

2. Grades

Use fine aggregate for cushion with less than 10 percent total silt and clay. Grade as follows:

Size	Percent by Weight
Passing No. 4 (4.75 mm) sieve	100
Passing No. 16 (1.18 mm) sieve	25-75
Passing No. 100 (150 µm) sieve	0-25

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test as follows:

- Sieve analysis—AASHTO T 27

D. Materials Warranty

General Provisions 101 through 150.

801.2.02 Fine Aggregate for Portland Cement Concrete of All Types and for Mortar

A. Requirements

1. Concrete and Mortar

Use fine aggregate for concrete and mortar that consists of natural sand, manufactured sand, or blends of natural and manufactured sands, having hard, clean, strong, durable, uncoated particles, meeting the requirements of the Specifications.

2. Manufactured Sand

~~Use manufactured sand made exclusively from crushed stone or gravel that meets Section 800 requirements.~~

Manufactured sand used in concrete for construction of Portland cement concrete pavement, approach slabs, and bridge decks, shall be made from Group II aggregates as specified in Subsection 800.2.01.A.2.

3. Miscellaneous Concrete

Sand manufactured from synthetic aggregate ~~meeting the requirements of Section 800~~ may be blended with natural sands or manufactured sands made from crushed stone or gravel for use in miscellaneous concrete as described in Section 441.

Blend at least 50 percent natural sand or manufactured sand made from crushed stone or gravel.

4. Concrete Sand

Concrete sand that passes the No. 10 (2 mm) sieve shall have these characteristics:

Characteristic	Requirement
Durability index	70 or greater
Sand equivalent	70 or greater

5. Detrimental Substances

   Keep detrimental substances within these limits:

Substance	Maximum Percent by Weight
Clay lumps	0.5 maximum in total sample
Coal and lignite	0.5 maximum in total sample
All detrimental substances (any combination)	2.0 maximum in total sample
NOTE: Do not use fine aggregate in Portland cement concrete that is capable of producing a deleterious reaction with Portland cement	

   a. Provided the material passing the No. 16 (1.18 mm) sieve is petrographically determined to be essentially free of detrimental substances, test results for coal and lignite and other detrimental substances listed will be based upon a petrographic analysis of material retained on the No. 16 (1.18 mm) sieve.

   b. Calculations will be based upon the weighted average for the total sample.

   c. Other detrimental substances include constituents such as shale, weathered or decomposed rock, soft or friable particles, coated grains, or other substances that might be considered detrimental for the use intended.

6. Organic Impurities (natural sands only)

   Ensure all fine aggregate is free from detrimental amounts of organic impurities.

   Do not use materials that have colorimetric test (AASHTO T 21) results darker than the Reference Standard color plate.

7. Grades

   Grade fine aggregates for Portland cement concrete and mortar as follows:

Size No.	Description	Total Percent by Weight Passing Each Sieve					
		3/8 in. (9.5 mm)	No. 4 (4.75 mm)	No. 16 (1.18 mm)	No. 50 (300 µm)	No. 100 (150 µm)	No. 200 (75 µm)
10 NS	Natural concrete sand	100	95-100	45-95	5-30	0-10	0-3
20 NS	Natural mortar sand	100	100	90-100	15-50	0-15	0-5
10 SM	Standard manufactured concrete sand	100	95-100	45-95	8-30	1-10	0-4
10 FM	Fine manufactured concrete sand	100	95-100	45-95	15-42	6-22	0-9

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test as follows:

Test	Method
Petrographic analysis	ASTM C 295
Material that passes a No. 200 (75 µm) sieve	AASHTO T 11
Organic impurities	AASHTO T 21
Sieve analysis	AASHTO T 27
Sand equivalent	GDT 63
Reactivity	AASHTO T 303
Durability index	GDT 75
Clay lumps	AASHTO T 112
Friable Particles	GDT 132
NOTE: The percent passing the No. 200 sieve (75 µm) for size 10FM will be based upon the total percent determined by AASHTO T-11 and AASHTO T-27. The percent passing the No. 200 sieve (75 µm) for sizes 10NS, 20NS and 10SM will be as determined by AASHTO T-11 only.	

D. Materials Warranty

General Provisions 101 through 150.